REMARKS

Claims 1-32 and 57-60 were pending in the above-captioned application when the present Office Action was mailed (December 21, 2005). In this response, none of the claims have been amended, and new claims 61 and 62 have been added. Accordingly, claims 1-32 and 57-62 are currently pending.

In the December 21, 2005 Office Action, all pending claims were rejected. More specifically, the status of the claims in light of the December 21 Office Action is as follows:

(A) Claims 1, 12, 13, 16, 17, 21, 25, 27, 28 and 57-60 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,700,127 to Harada et al. ("Harada") in view of U.S. Patent No. 5,700,046 to van Doren ("van Doren");

(B) Claims 2-5, 7, 9-11, 18-20, 22, 23, and 29-32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Harada in view of van Doren and further in view of passages in the present application;

(C) Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Harada and van Doren in view of U.S. Patent No. 4,466,864 to Bacon et al. ("Bacon");

(D) Claims 8 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Harada in view of van Doren and further in view of U.S. Patent No. 5,168,886 to Thompson et al. ("Thompson");

(E) Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Harada in view of van Doren and further in view of U.S. Patent No. 5,378,145 to Ono et al. ("Ono"); and

(F) Claims 15 and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Harada in view of van Doren and further in view of U.S. Patent No. 5,731,678 to Zila et al. ("Zila").

A. Response to the Section 103 Rejection on the Basis of Harada and van Doren

Claim 1 is directed to an apparatus for processing microelectronic workpieces, and includes a plurality of processing stations, an input/output station configured to support at least one microelectronic workpiece for automatic transfer to and from the processing stations, and a transfer device. The transfer device is positioned proximate to the input/output station and the processing stations, and is automatically movable to transfer microelectronic workpieces between the input/output station and the processing stations. The transfer device is positioned to release the microelectronic workpieces for processing at the processing stations, and includes a first end effector and a second end effector, each being rotatable relative to the other about a common axis. The dual end effector arrangement can improve the efficiency with which microelectronic workpieces are moved within the apparatus for processing.

Harada is directed to a photoresist processing system 1 (shown in Figure 1) that includes a loading/unloading section 2, a processing section 3, a substrate transferring device 4, an exchanging section 5, and two main arms 10 and 10a (Harada at column 4, lines 31-35). At the exchanging section 5, wafers W are extracted from a wafer cassette 6 by the substrate transferring device 4 one by one (column 4, lines 49-51). The main arm 10 is arranged such that the main arm 10 can travel along a common convey path, and the wafer W can be exchanged between the transfer arm [sic] 4 and each of the processing units 34-37a (column 4, line 59-63). Each of the main arms 10, 10a is configured to carry a single wafer (see Figures 1 and 3). The wafers can be sequentially conveyed in an order which is programmed in advance, and can be subjected to predetermined processes (column 8, lines 32-34).

Van Doren is directed to a wafer handling robot 10 which includes two "fork" grippers 12 (Figure 1 and column 3, lines 33-34). Each gripper assembly includes a pair of gripping members 14 and three contactor elements 18 that protrude inwardly from each of the gripping members 14 to support and center a wafer between them (column 3, lines 35-

40). By using a total of six contactor elements, van Doren achieves greater centering accuracy of a wafer (column 3, lines 40-41).

The Office Action states that it would have obvious to one of ordinary skill in the art to have used the dual end effector taught by van Doren in the apparatus disclosed by Harada because the dual end effector increases microelectronic workpiece processing speed. This argument is based on hindsight reasoning. As stated in C. R. Bard Inc. v. M3 Systems Inc., 48 U.S.P.Q.2d, 1232 (Fed. Cir. 1998), "It is insufficient that prior art shows similar components, unless it also contains some teaching, suggestion or incentive for arriving at the claimed structure." As stated by the court in In re Sernaker, 217 U.S.P.Q. 1, 6 (Fed. Cir. 1983) in discussing an earlier case, "the lesson of this case appears to be that prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings."

Applicants submit that, as in the C.R. Bard case and the Sernaker case, claim 1 is not obvious over the applied references because there is nothing in the references that would suggest the claimed combination. First, although the Examiner states that the dual end effector increases microelectronic workpiece processing speed, the purpose of van Doren's disclosed invention is "greater centering accuracy of a wafer," (van Doren, column 3, line 41). The "greater centering accuracy" is achieved by van Doren's six contactor elements. Van Doren is silent with regard to any advantages of his two "fork" end grippers 12. However, even assuming for the sake of argument that van Doren did disclose such an advantage, there is no suggestion in either van Doren or Harada to incorporate such a feature in Harada's tool. Harada only discloses single wafer handling, beginning with his substrate transferring device 4 which handles wafers "one by one" and continuing with his main arm 10 which provides that the "wafers W can be sequentially conveyed in an order which is programmed in advance." Accordingly, Harada specifically discloses single wafer processing and an associated sequential order in which wafers are conveyed, and nowhere discloses or suggests the need for or advantage of a transfer device that includes

first and second end effectors, each rotatable relative to the other about a common axis. Accordingly, a *prima facie* case of obviousness under Section 103 has not been established for claim 1, and therefore the Section 103 rejection of claim 1 should be withdrawn.

Claims 12, 13, 16, 17, and 57-60 all depend from claim 1. Accordingly, the Section 103 rejections of these claims should be withdrawn for the foregoing reasons and for the additional features of these dependent claims.

Independent claims 21 and 28 include features generally similar to those described above with reference to claim 1. Accordingly, the Section 103 rejections of these claims should be withdrawn for the foregoing reasons and for the additional features of these claims. Claims 25 and 27 depend from claim 21 and accordingly, the Section 103 rejections of these claims should be withdrawn for the foregoing reasons and the additional features of these dependent claims.

B. Response to the Section 103 Rejections on the Basis of Harada, van Doren and Applicant's Specification

Claims 2-5, 7, 9-11, 18-20, 22, 23 and 29-32 were rejected under Section 103 on the basis of Harada in view of van Doren and further in view of applicant's specification. These claims all depend from claim 1, 21 or 28. Without commenting on or conceding the merits of the reliance on the applicant's specification to support a rejection of the additional features of these dependent claims, the passages of the specification cited by the Examiner fail to cure the deficiencies of Harada and van Doren as establishing a *prima facie* case with respect to the subject matter on the base claims. Accordingly, the Section 103 rejections of the dependent claims should be withdrawn for the reasons discussed above, and for the additional features of these claims.

C. Response to the Section 103 Rejection of Claim 6

Claim 6, which depends from claim 1, was rejected under Section 103 as being unpatentable over Harada in view of van Doren and Bacon. Bacon was relied upon for

disclosing details of a vessel arrangement. Without commenting on or conceding the merits of the reliance on Bacon to support a rejection of the additional features of these dependent claims, Bacon fails to cure the deficiencies described above with reference to Harada and van Doren as establishing a *prima facie* basis under Section 103 for rejecting claim 1. Accordingly, the Section 103 rejection of dependent claim 6 should be withdrawn for the reasons discussed above, and for the additional features of this claim.

D. Response to the Section 103 Rejections of Claims 8 and 24

Claims 8 and 24 were rejected under 35 U.S.C. § 103(a) on the basis of Harada, van Doren and Thompson. Claim 8 depends from claim 1 and claim 24 depends from claim 21. Thompson was relied upon for the disclosure of vessel details. Without commenting on or conceding the merits of the reliance on the Thompson to support a rejection of the additional features of these dependent claims, Thompson fails to cure the deficiencies discussed above with reference to Harada and van Doren as establishing a *prima facie* basis for rejecting the base claims under Section 103. Accordingly, the Section 103 rejections of claims 8 and 24 should be withdrawn for the foregoing reasons, and for the additional features of these claims.

E. Response to the Section 103 Rejection of Claim 14

Claim 14, which depends from claim 1, stands rejected under Section 103 as being unpatentable over Harada in view of van Doren and further in view of Ono. Ono is relied upon for the disclosure of manually accessible processing stations. As is discussed in greater detail below with reference to new claim 61, Ono does not disclose manually accessible processing stations as identified by claim 14. Furthermore, Ono fails to cure the deficiencies described above with reference to Harada and van Doren as establishing a *prima facie* basis for rejecting claim 1 under Section 103, and therefore also for claim 14. Accordingly, the Section 103 rejection of claim 14 should be withdrawn for the reasons discussed above and for the additional features of this dependent claim.

F. Response to the Section 103 Rejections of Claims 15 and 26

Claims 15 and 26 were rejected under Section 103 on the basis of Harada and van Doren and further in view of Zila. Claim 15 depends from claim 1 and claim 26 depends from claim 21. Zila is relied upon for disclosing a processing station having two transferring positions, one for accepting a workpiece from a robot and another for accepting the workpiece manually. Applicant's attorney is unclear as to what portion of Zila's disclosure is being relied upon to support this position. Furthermore, Zila fails to cure the deficiencies noted above with reference to Harada and Ono as establishing a *prima facie* rejection of claims 15 and 26 under Section 103. Therefore, for at least the foregoing reasons and the additional features of these dependent claims, the Section 103 rejections of these claims should be withdrawn.

G. New Claims 61 and 62 Are Patentable Over the Applied References

Claim 61 corresponds generally to claim 14, rewritten to be in independent form, and amended to clarify that the manual access for all the stations of the apparatus is for placing wafers at the stations for processing. None of the applied references disclose or suggest this feature. In particular, while the Office Action states in connection with claim 14 that Ono discloses processing stations manually accessible from a single side for access during maintenance, Ono fails to disclose or suggest a feature that allows manual accessibility for wafer processing. Accordingly, for at least the reasons discussed below, claim 61 is in condition for allowance.

Ono discloses a treatment room 124 for treating wafers, and a workroom 126 in which an operator operates a control unit (column 8, lines 48-68). The treatment room includes treatment apparatuses 10, 12, 14, and 16 (column 9, lines 1-2). A transfer path 24 for the wafers is separated from the workroom 126 and the treatment room 124 by antistatic doors 142. The transfer path is disposed in a transfer chamber 300 partitioned off by antistatic doors 142 and 301 (column 9, lines 10-16). Representative examples of a heat treatment apparatus are shown in further detail in Figure 12 and identified as a

treatment chamber 310. The chamber 310 includes a furnace 206 which receives a wafer boat 200 transported by a boat elevator 204 (Figure 12 and column 12, lines 47-67).

As is clear from Ono's description and from Figure 12, if one assumes that the furnace 206 corresponds to the processing station of claim 61, the processing station is not "manually accessible from a single side of the apparatus for placing wafers at the stations for processing." Referring to Figure 12, if a user were to attempt to manually place a wafer at the furnace 206, the user would have to in some way thread the wafer through a convoluted path over, around and between the components located between Ono's load/unload portion GW and the furnace 206. These components include a transfer stage 194, storage chambers 196, wafer transfer 202, and wafer boats 200 carried by a boat elevator 204. Clearly, Ono's apparatus does not anticipate or render obvious the manual accessibility feature of claim 61. In fact, much of Ono's disclosure is devoted to describing the airtight characteristics of his apparatus, and the resulting cleanliness of processes conducted in the apparatus. Accordingly, Ono teaches away from an apparatus in which "all the processing stations . . . are manually accessible from a single side of the apparatus for placing wafers at the stations for processing." For at least the foregoing reasons, the applied references fail to disclose or suggest at least some of the features of claim 61 and therefore, claim 61 should be allowed. Claim 62 depends from claim 61 and further includes elements generally similar to those described above with reference to claim 15. For at least the foregoing reasons and for the additional features of claim 62, claim 62 is in condition for allowance.

H. Conclusion

In view of the foregoing, the claims pending in the application comply with the requirements of 35 U.S.C. § 112 and patentably define over the applied art. A Notice of Allowance is, therefore, respectfully requested. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-3257.

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Respectfully submitted,

By _____

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